UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,366	09/25/2003	John Martin Ludden	ROC920030196US1	1855

30206	7590	08/18/2006	

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EXAMINER
LAI, VINCENT

ART UNIT	PAPER NUMBER
2181	

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _25 September 2003_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-18_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-18_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

FRITZ FLEMING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100
8/17/2006

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1.   Claims 7-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The specification discloses on page 9 that the computer program product can be stored in a communication link, which may be directed to non-statutory subject matter since it is unclear as what a link is and links such as carrier waves and signals are non-statutory.

It is suggested that "a computer program product" be replaced with "a computer readable medium" to overcome the 35 U.S.C. 101 rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Yuan et al (U.S. Patent # 6,321,186 B1), herein referred to as Yuan.

As per claim 1, Yuan discloses a method for implementing a level bias function

for branch prediction control for generating test simulation vectors comprising the steps

of:

receiving user selected options for a set of constraints for generating test

simulation vectors for branch conditional instructions (See column 2, lines 33-36 and

column 10, lines 11-13: Weights are user-defined and are constraints for simulation);

reading current resource values for predicting a branch for a branch conditional

instruction (See column 7, lines 16-18: Current state information is used in the

simulation); and

generating a branch operand field BO to include a set of valid values using said

current resource values and based upon said user selected constraints (See column 2,

lines 22-30: A BDD has conditions set and used current state information); said branch

operand field BO defining conditions under which a branch is taken (See column 2, lines

23-26: The information is based on conditions set and thus will define the conditions

under which a branch is taken).

As per claim 2, Yuan discloses wherein the step of receiving user selected

options for a set of constraints includes the steps of receiving user selected options for

constraints including a percentage branch should be taken; a percentage branch should

be predicted; and an accuracy of the prediction (See column 10, lines 11-13: User-

defined weights would entail percentages).

As per claim 3, Yuan discloses wherein the step of reading current resource

values for predicting a branch for a branch conditional instruction includes the steps of

reading a count register (CTR) value and a plurality of branch condition register (CR)

values (See figure 2 and column 8, lines 31-35: Current state values of registers are

sampled for simulation, as registers are part of the processor circuitry); said CR values

including a current value of said branch operand field BO, and a current value of a

branch operand field BI, said branch operand field BI indicating a CR bit to be read (See

figure 2 and column 4, lines 45-46: Simulation is also dependent on stored constraint

information).

As per claim 4, Yuan discloses wherein the step of generating said branch

operand field to include said set of valid values using said current resource values and

based upon said user selected constraints includes the step of reducing said branch

operand field BO based upon a current CR value of said branch operand field BI and

based upon said user selected constraints (See column 2, lines 23-26: The information

is based on conditions set and thus will define the conditions under which a branch is

taken. The BDD will change due to constraint changes).

As per claim 5, Yuan discloses wherein the step of generating said branch

operand field to include said set of valid values using said current resource values and

based upon said user selected constraints includes the steps of reducing said branch

operand field BO based upon said a current count register (CTR) value and said user

selected constraints (See column 2, lines 23-26: The information is based on conditions

set and thus will define the conditions under which a branch is taken. The BDD will

change due to constraint changes).

As per claim 6, Yuan discloses wherein the step of generating said branch

operand field to include said set of valid values using said current resource values and

based upon said user selected constraints includes the steps of reducing said branch

operand field BO based upon user selected options for said percentage branch should

be predicted and said accuracy of the prediction constraints (See column 2, lines 23-26:

The information is based on conditions set and thus will define the conditions under

which a branch is taken. The BDD will change due to constraint changes).

Claims 7-12 are rejected for the same reasoning used for claims 1-6, with the

exception claim 7-12 pertain to a computer program product, which is disclosed in

column 2, lines 48-49.

Claims 13-18 are rejected for the same reasoning used for claims 1-6, with the

exception claim 13-18 pertain to an apparatus, which is disclosed in figure 1 and column

3, lines 34-42, where simulator 14 calculates and outputs the prediction and the

simulation controller 12 inputs all the constraints (or current state of registers, values,

etc), probabilities (or percentages) and design files (which is indicative of the physical state of the circuitry).

Conclusion

3.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to be related to a method, apparatus and computer program product for implementing level bias function for branch prediction control for generating test simulation vectors:

U.S. Patent # 5,781,789 to Narayan shows a superscalar microprocessor employing a parallel mask decoder.

U.S. Patent # 6,141,748 to Tran shows a branch selector associated with byte ranges within an instruction cache for rapidly identifying branch predictions.

4.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Lai whose telephone number is (571) 272-6749. The examiner can normally be reached on M-F 8:00-5:30 (First BiWeek Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz M. Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vincent Lai
Examiner
Art Unit 2181

vl
August 16, 2006

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8/17/2006